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(58) Field of search
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(54) **Leather laminate**

(57) A leather laminate comprising a relatively thin outer leather layer to one face of which is attached a reinforcing mesh, preferably made of metal, plastics (polymer) or glass fibre. Additional reinforcing layers may also be attached to the mesh which can itself be encapsulated in a foam layer.

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LEATHER LAMINATE INCORPORATINGA STRUCTURAL LAYER

5 This invention relates to a leather laminate
incorporating at least one structural reinforcing
layer and more particularly to a leather laminate
which can be used in connection with load bearing
products such as suitcases, briefcases, handbags,
golfbags, pistol holsters, gun cases, tool holsters,
10 etc.

Load bearing products such as those mentioned above
must be not only strong and stiff but also resistant
to tearing, surface abrasion and, in particular,
15 excessive stretching and structural deformation.
Consequently, leather used for load bearing products
(known as leather stock) is usually very thick and
heavy. One example of such leather is called
"belting" or "harness" leather. Products made from
20 this thick heavy leather stock do have excellent
durability but they are generally very heavy and
therefore uncomfortable to wear or carry around.

In general, leather stock which has the required strength and stiffness is made from calf cowhide, steerhide, horsehide, etc. and is usually relatively expensive and difficult to work with. It is usually vegetable or oil-tanned and the selection of colours or dyes which can be used with such a material is limited. Colour or dye is generally applied as a surface stain after tanning and does not penetrate the full thickness of the leather thus making it susceptible to scratching, scuffing and surface wear. Modern soft chrome-dyed leather stock materials in which the dye penetrates the hide during the tanning process may have excellent surface wearability but they usually lack the strength and stiffness required to render them "load bearing" and resistant to deformation. These types of leather stock are derived mainly from sheepskin and goatskin and are available in a wide variety of colours, surface textures and finishes. They are much easier to work with, i.e. cut, glue, form and sew than the stiff stock leathers and they are also plentiful and usually much less expensive.

Soft, chrome-dyed leathers are often laminated with fabrics, polymer foams, films, paperboards or thin layers of wood in order to enable them to be used in load-bearing products. Sometimes a chrome dyed leather will be used as a decorative surface layer in a laminate with suedes or other relatively thick hides in order to add stiffness and strength.

It will be seen from the foregoing that existing leather laminates which are suitable for use in load bearing products therefore tend to be thick and bulky or heavy, or both. It is therefore an object of the present invention to provide an improved leather laminate which overcomes or substantially reduces the problems of known products.

According to the invention, there is provided a reinforced leather laminate comprising a relatively thin outer layer of leather to one face of which is attached a reinforcing mesh made of a material other than a textile fabric.

The term "relatively thin" is intended to mean a leather material having a thickness less than that of stock leather.

- 5 Preferably the mesh is comprised of metallic, glass or plastics monofilaments.

There is no restriction on the number of reinforcing layers or their composition. Thus, an inner
10 reinforcing layer may be bonded to the mesh to provide a sandwich laminate. This inner reinforcing layer may be another leather layer or a fabric layer or a polymer foam layer or a layer of film or any combination thereof. In one embodiment, the mesh
15 is sandwiched between two fabric layers, one of which is attached to the relatively thin outer leather layer. In another embodiment, the mesh is embedded or encapsulated in a layer of foam which is itself attached to the relatively thin outer leather layer.

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Preferably, the mesh is glued or bonded to the relatively thin outer leather layer or any other layers attached thereto. It may however be merely

attached, for instance by rivetting or sewing, to the or each other layer at the outer contours of the laminate or composite material.

5 The leather and mesh laminate material may be manufactured as a stock product or alternatively the mesh may be applied to a preformed or semi-formed relatively thin leather layer if this proves more practical.

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The leather laminate of the present invention with its reinforcing mesh layer attached to a relatively thin outer leather layer, even a soft leather, is extremely strong, stiff and light in weight. The wear characteristics of the relatively thin outer leather layer are determined by the outer leather material itself and its coatings. The resistance to stretching and deformation is determined by the characteristics of the reinforcing mesh whose properties may be enhanced by other optional layers and factors such as the composition of those layers, their spacing, the thickness of the filaments making up the mesh

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material as well as by the manner in which the various layers are bonded or glued or attached together.

5 By way of example, a lightweight yet strong and deformation resistant pistol-holder can be manufactured by laminating together a thin, soft goatskin leather of the type used for garments with a mesh reinforcing layer, preferably a wire mesh.

10 Unlike many other leather laminates, the laminate of the present invention provides a material which is thin, yet sufficiently stiff to be used in load bearing products but still light in weight.

15 Furthermore, it allows the use of a wide variety of soft, thin leathers of varying colours and textures to be used in the manufacture of many different types of leather products and it also allows a reduction in the cost of such products through the use of less
20 expensive leathers and hides.

CLAIMS

1. A reinforced leather laminate comprising a relatively thin outer layer of leather to one face of
5 which is attached a reinforcing mesh made of a material other than a textile fabric.
2. A laminate as claimed in claim 1 wherein the mesh is made of wire.
- 10 3. A laminate as claimed in claim 1 wherein the mesh is made of a plastics material.
- 15 4. A laminate as claimed in any of claims 1-3 wherein the mesh is sandwiched between the outer leather layer and an inner layer attached thereto.

5. A leather laminate as claimed in claim 4 wherein the inner layer is another leather layer.

5 6. A leather laminate as claimed in claim 4 wherein the inner layer is a layer of fabric.

7. A leather laminate as claimed in claim 4 wherein the inner layer is a layer of polymer foam.

10 8. A leather laminate wherein the inner layer is a thin film.

9. A leather laminate as claimed in claim 6 wherein a further fabric layer is interposed between the
15 mesh and the outer leather layer.

10. A leather laminate as claimed in any one of claims 1-3 wherein the mesh is embedded or

encapsulated in a layer of foam which is attached to the outer leather layer.

5 11. A leather laminate as claimed in any one of claims 1-9 wherein the mesh is glued or bonded to the outer leather layer.

10 12. A leather laminate as claimed in claim 11 wherein the mesh is glued or bonded to the or each other layer attached thereto.

13. A leather laminate substantially as herein described.